



# INTO THE CRYPTOCOSM:

Three Stocks Every  
Investor Needs to Own

# THE GEORGE GILDER REPORT

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### Three Stocks Every Investor Needs to Own

On May 30, 2014, I packed my bags, said goodbye to my wife and kids and flew to Tuscany, Italy. It was the start of my own personal “Grail Quest.” Back then, Bitcoin traded at \$571. By that point it had already seen several booms and busts.

It had made some people a fortune...and helped others lose one. Yet back then, it was still the kind of niche technology that only cyberpunks and coding nerds could truly understand or appreciate.

I’d spoken to enough of them to understand that it had huge, era-defining potential. And so began my quest — to seek out the real creator of Bitcoin, the mysterious “Satoshi Nakamoto.”

This is easier said than done. Nakamoto had unleashed Bitcoin on the world in the wake of the financial crisis back in 2009. Then, on Dec. 11, 2010 — poof — he (or she) disappeared. Aside from one brief reappearance in 2014, the world has never heard from Nakamoto again... though hundreds of millions of people now use the currency he created.

My search took me deeper into the emerging world of crypto technology than I ever anticipated. I found myself analyzing the 150 posts Nakamoto had left on Cypherpunk message boards. I studied his coding. He seemed to have a British education, a U.S. time zone and a German internet address.

From there I found myself crisscrossing the globe in my search for the enigmatic “founder” of the world’s first truly digital currency... Los Angeles... San Francisco... the Netherlands... On the way, I crossed paths with many of the crypto world’s best and brightest, like Vitalik Buterin, founder of Ethereum... Craig Wright (who claims to be Satoshi Nakamoto but can’t prove it)... and Muneeb Ali, founder of Blockstack.

I set out to find Nakamoto himself, but what I found turned out to be much more valuable. See, as I delved deeper into the crypto world, I found something far bigger and more important than simply a new *currency*.

In fact, I discovered a whole new “System of the World” that is going to change your life in all kinds of ways... and send shock waves through not just Silicon Valley but the whole world economy. I call it: the Cryptocosm.

Right now the world’s biggest and most powerful companies survive and thrive because they are centralized. They’re either tech giants — like Google, Facebook, Amazon and Microsoft — that thrive in a porous, insecure internet where they own and control all the data. Or they’re big financial institutions like Goldman Sachs, JP Morgan and other Wall Street giants — that thrive in a financial system where money is centralized too. What I’m here to tell you is the Cryptocosm that’s emerging right now — which includes Bitcoin — is going to completely overturn and destroy this paradigm.

I mean, look at the developments we’ve seen with Bitcoin recently. Elon Musk’s Tesla decided to own \$1.5 billion worth on its balance sheet. Around the same time, we saw America’s oldest bank, BNY Mellon, open a crypto holding facility for its customers, citing “growing client demand.” Mastercard has announced it’ll incorporate crypto into its payment systems this year. Twitter is considering holding Bitcoin as an asset. Square already has. Then you have Goldman Sachs, JP Morgan and Grayscale. Pretty much any business that needs to use the internet, records transactions and tracks data in a secure way — which these days is pretty much every business on the planet — is getting very excited about blockchain.

You have BMW, Ford, Honda, General Motors, Hyundai — they’re all part of something called the Mobile Open Blockchain Initiative. It’s effectively a way of tracking where key components for new cars come from. Then you have De Beers — the diamond broker. It uses the blockchain to track where its diamonds are coming from via a new software platform called Tracr. Or General Electric. It tracks where airplane engine parts come from using the blockchain. Foxconn — the iPhone manufacturer — is developing a smartphone built entirely around the blockchain. Walmart, the

United Nations, Nestlé, Credit Suisse, Royal Dutch Shell, the Depository Trust and Clearing Corp., which has a \$10 trillion derivative portfolio — they're all moving onto the blockchain.

The Cryptocosm is — in effect — a new form of the internet, built around decentralization, privacy and security. It's an entire ecosystem, encompassing everything from blockchain to the internet of things. And very soon... I believe it is going to surpass Bitcoin. It'll be more widely used... more critical to society and business... and, ultimately, more lucrative for investors...

But these returns aren't being driven by a small community of tech nerds and coders. Maybe that was true five years ago. But now all the ENERGY is coming from rapid real-world adoption of decentralized, distributed, often blockchain-based technology — which I call the Cryptocosm.

Our **Paradigm Portfolio** rests on the COSMs — the Microcosm, Telecosm and Cryptocosm. In more detail, the three fundamental technology vectors that define the future: the Microcosm for computation and control functions, the Telecosm for communication blending into a re-representation of the physical world and the Cryptocosm to secure the riches created by the first two.

We invest in these for the long term, because they are creating the future.

The COSMs are not useful for identifying short-term trading strategies. But they are crucial to the one proven way to amass great wealth from investment: through exponential growth and the magic of compounding, over years and decades.

The COSMs don't tell us which particular stocks to own for the long haul. However, they do point to "ZIP codes," as our friend Andy Kessler likes to say. It is in those ZIP codes we find companies worth investigating.

A visionary COSM paradigm — the kind that we specialize in — coupled with an undervalued company pursuing opportunities in the COSMs is what we love.

## Ignore the Wall Street Noise

Everyone tells me **Intel (INTC)** is dead. “Don’t invest in Intel!” “Lisa Su of AMD is eating Intel’s lunch and Morris Chang and his followers at **Taiwan Semiconductor (TSM)** are taking over its kitchen.” “Jensen Huang at Nvidia is usurping its datacenter future in chips for artificial intelligence.”

Now, I can see why people are down on Intel... After peaking at some \$78 billion in sales during the COVID computing boom, Intel is guiding sharply lower. To many, the company seems to be in the throes of a DE (digital equipment) dotage – when it revelled in vulnerable minicomputer revenues just before going over a cliff.

Seemingly lost on the shortsighted analysts and momentum traders during the Q2 ’21 report was CEO Pat Gelsinger’s comment that **Intel is only in the early innings of what is likely to be a decade of sustained growth across the industry.**

Let’s ignore the short-term noise from Wall Street and zero in on Intel’s opportunities beyond the current quarter. There are many, as Gelsinger noted during the Q2 ’21 call.

It is encouraging to see Intel partnering with companies like Qualcomm to develop a major smartphone platform at the 20A node scale. Intel missed a huge opportunity with smartphones under previous management guidance. Gelsinger is on a mission to achieve a foothold in the smartphone market, and a successful partnership with **Qualcomm (QCOM)** would help achieve this goal.

There will be other partnership opportunities too to expand into new markets, but Gelsinger is keeping the cards close to the vest right now.

The company’s semiconductor road map requires fully embracing EUV lithography. Gelsinger said EUV will be foundational for all chips starting with the Intel 4 architecture in 2023. Having a EUV ecosystem today is vital to building a world-class semiconductor business. Gelsinger stated Intel is working diligently to build out the EUV ecosystem.

Intel's wholly owned subsidiary IMS Nanofabrication uses a novel multi-beam technology to provide the large majority of EUV mask writing tools to the semiconductor industry. Gelsinger said Intel has plans to accelerate EUV investments to advance what he views as pivotal ecosystem capability for the company. Intel is also working with **Paradigm Portfolio** holding **ASML (ASML)** to help define, build and deploy next-generation EUV technology called high numerical aperture EUV.

On the processor side of the business, Gelsinger said Intel is using its broad portfolio of assets to compete aggressively for market segment share. The company launched 12 new processors, and Tiger Lake is ramping even better than expected with more than 50 million units shipped to date.

Gelsinger noted that the demand for next-generation processors is strong. He expects Intel to ship several million units of its Alder Lake processors to customers in the second half of this year, while Meteor Lake remains on track for production in 2023. Beyond the CPU, Intel reached a major milestone with Microsoft and the announcement of Windows 11. Gelsinger said Intel has deepened its co-engineering efforts to enable new experiences, including running Android applications seamlessly on PCs and optimizing for Intel-based platforms.

Meanwhile, momentum is building in the data center segment. Gelsinger expects the data center segment to grow sequentially, achieving double-digit year-over-year growth in the second half as it accelerates through the rest of the year.

Intel subsidiary Mobileye's business continues to ramp, with the company moving to solidify its position as the leading supplier of advanced driver-assistance platforms. Mobileye has the largest global footprint in the AV industry, enabled by the company's unique REM distributed mapping technology.

In Q2, Mobileye announced a major win with Toyota and closed 10 additional design wins for over 16 million total lifetime units. This summer Mobileye hit a major milestone by becoming the first industry player to start testing autonomous vehicles in New York City.

Gelsinger said Intel Foundry Services (IFS) continued to build momentum

during the second quarter and is “off to the races.” The path to a successful foundry business is long and arduous (it took Samsung a decade), but the opportunities are vast. There’s been speculation that Intel might acquire GlobalFoundries, which has plans to go public via an IPO next year. At this juncture, it’s just speculation. Both companies are mum on the subject.

Gelsinger continues to make strategic organizational changes to pursue business opportunities and further strengthen the company’s technology leadership and accelerate execution. Intel’s data platform group has been restructured into two business units:

1. The Data Center and AI Group, led by Sandra Rivera, an Intel veteran with deep knowledge of data center silicon and software.
2. The Network and Edge Group, led by Nick McKeown, a renowned leader in the networking industry.

Gelsinger noted they have also created the Accelerated Computing Systems and Graphics Group, led by Raja Koduri, to increase the company’s focus in key growth areas of high-performance computing and graphics. Shlomit Weiss has also recently rejoined Intel to strengthen its design engineering core.

Lastly, on the organization change list, Greg Lavender was hired as CTO and GM of Intel’s Software and Advanced Technology Group. Lavender’s mission is to drive a unified vision for Intel’s software strategy across the company and assure it remains a competitive differentiator going forward.

Companies that facilitate crypto mining and transactions all use INTC chips in their tech and with the demand for next-generation processors only getting stronger Intel stands to profit!

**ACTION TO TAKE: Buy Intel (INTC) at market.**

## “Unprecedented Demand” Is Good for Us!

And speaking of **Qualcomm (QCOM)**, the company rang the earnings bell for Q3 '21. The results for the quarter were stellar, with GAAP revenues up 65% year over year to \$8.1 billion and net income up 140% to \$2 billion. Both the top and bottom lines easily surpassed analyst estimates. Qualcomm is on pace to generate \$10 billion of annual revenues as it continues expanding the frontiers of the Telecosm.

I saw the tremendous opportunities associated with Qualcomm's CDMA technology when others did not. Investors who listened to me back in the 1990s and bought and held Qualcomm have been rewarded greatly.

As Qualcomm's long-term stock price shows, there have been ups and downs over time. But the long-term trend has been upward and exponential. A buy-and-hold strategy in Qualcomm would have produced a 10X-plus return.

A hypothetical \$25,000 investment in Qualcomm back in the early days of the Telecosm would be worth over a quarter of a million dollars today.

Forrest Gump would have nothing on you.

In the 1990s when we first recommended Qualcomm to readers there was no company on Earth that we were more confident would increase in value far beyond 10X within a few years.

From 1996–2006, it actually increased 25X not even counting the high silliness of 2000. We might not see a 10-bagger this time around, but the opportunity is still great.

Qualcomm appeared substantially undervalued — even before the coronavirus imposed a 30% discount on the stock and cut its P/E into the teens. It certainly deserves substantially higher multiples on earnings or sales than the averages for the Nasdaq, which it hovers near or below today.

Qualcomm's Q3 '21 financial update was stellar all the way around. The company reported top- and bottom-line numbers that easily exceeded expectations on the Street.



Revenue during Q3 '21 increased to \$8.1 billion, versus Street estimates. All while non-GAAP net profit rose to \$1.90 per share, well above analyst estimates of \$1.67 per share.

A big reason for the fabulous financial performance during the third quarter was sustained global demand for smartphones, as well as Qualcomm's ability to increase the scale of its non-handset revenues.

The company's latest-generation Snapdragon 888 5G Mobile Platform is gaining traction around the world at a healthy pace. Virtually all of Qualcomm's 5G design wins are powered by its RF front-end solutions, whether they support 4G, 5G sub-6 or 5G millimeter wave.

Beyond smartphones, the company is extending its RF front-end solutions across a variety of segments, including automotive, PCs, mobile hotspots and fixed wireless access in the broad IoT category.

If you have world-class technology like Qualcomm, you take Peter Drucker's sage advice to heart and pursue new opportunities. Given Qualcomm's design win pipeline and revenue run rate, it is on track to exceed its Analyst Day RF front-end revenue target of \$3.6 billion by fiscal year 2022 – with 5G sub-6 and 4G representing the majority of its RF front-end revenues.

The jury is still out on the future of mmWave technology and how big a contributor it will be to Qualcomm's future fortunes. It is noteworthy that the company is attracting interest in mmWave technology in China.

At Mobile World Congress Shanghai in China and in collaboration with China Unicom, ZTE and the GSMA, Qualcomm worked with 39 Chinese industry-leading companies to showcase the high-performance and rich applications on a live 5G millimeter wave network.

Qualcomm expects mmWave penetration to ramp next year. We'll be keeping a close eye on this part of the 5G business going forward.

Overall, Qualcomm is seeing what it called "unprecedented demand" across all of its technologies.

The company's bullish outlook flies in the face of the bearish procurements from various Street analysts following the Q4 '20 earnings update. No need to name names here.

**These analysts make the mistake of using the past as a guide to the future.** It's akin to driving a car while looking only in the rearview mirror. Such behavior is not advisable while driving or investing.

From a valuation perspective, Qualcomm's stock is trading on a P/E of 16.1 and a forward P/E of 14.0. This compares favorably with the Nasdaq-100 index P/E and forward P/E of 35.96 and 29.0, respectively. As an added total return kicker, Qualcomm's stock dividend yield is 2.10%, which is above the current 2.05% yield on a 30-year Treasury bond.

This summer CEO Steve Mollenkopf handed over the reins to longtime Qualcomm executive Cristiano Amon. The task for Amon and his colleagues at Qualcomm was clear: Telecosmic world domination through innovation and a high level of operational execution.

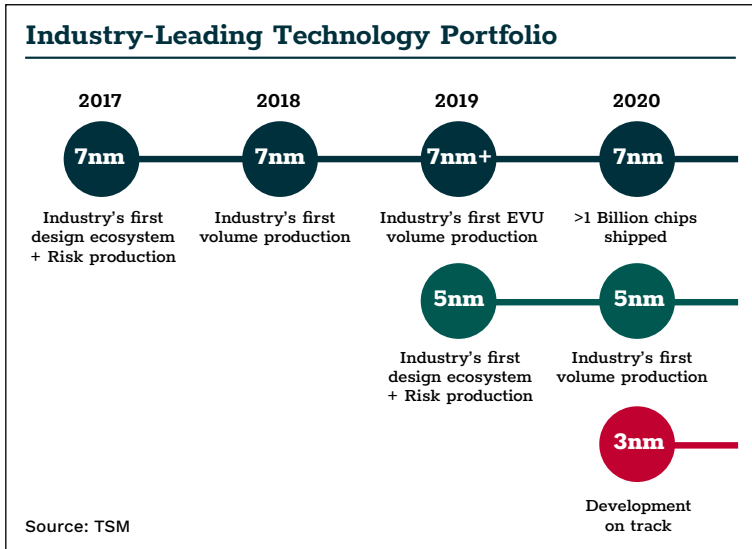
When Qualcomm released its quarter three numbers, Mr. Amon had this to say "In addition to leading the 5G transition, we are on pace to deliver \$10 billion of annual revenues across RF front-end, IoT and Automotive as our business continues to diversify. Our solutions are fueling the connected intelligent edge that is enabling the cloud economy, and we are seeing unprecedented demand for our technologies as the pace of digital transformation accelerates."

As the gatekeeper of 5G, all Bitcoin and crypto transactions are built across the access to the fast internet that Qualcomm's chips facilitate.

**ACTION TO TAKE: Buy Qualcomm (QCOM) at market.**

## From Nanocosm to Cryptocosm

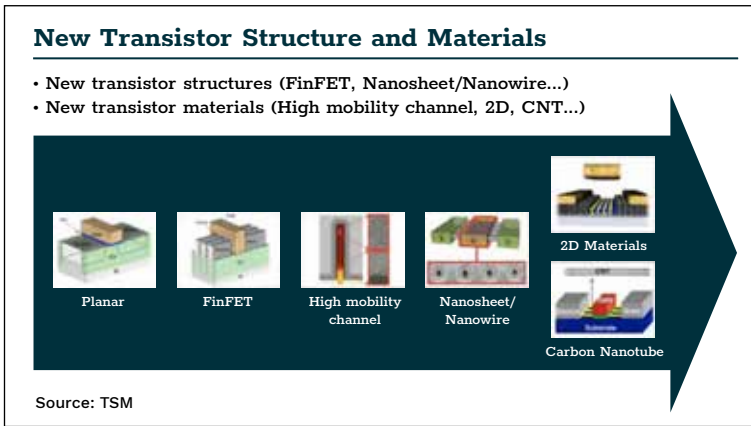
Looking back over the past five years, **Taiwan Semiconductor Corp.'s (TSM)** fabrication process has evolved from 7 nm to 5 nm, with 3 nm development on the near-term horizon. It was only a couple of years ago that the company achieved the industry's first EUV volume production at the 7 nm scale (see exhibit below).



TSM has an organizational structure geared toward looking far out into the future to explore new and innovative ways to progress chip development. To guide the research that propels TSM deeper into the Nanocosm, TSM looks to input from the market as well as its diverse customer base. The company works diligently to understand the system complexity of various customers around the world. It's a dynamic process, with a great deal of interaction within the focused teams at TSM as well as with customers. This way of doing R&D has served the company well in the past, and will continue to do so in the future.

And speaking about the future, TSM is on a mission to continue to drive the advancement of silicon technology, while at the same time exploring the use of other materials, architectures (e.g., 3D chips) and packaging technology. Venturing deeper into the Nanocosm has created a lot of challenges as well as opportunities for companies like TSM, which are

exploring new structures and materials for transistors to ensure that there is life after silicon (see exhibit below).



Research into new materials is intensifying as the number of manufacturing challenges increases (as node scales migrate down to 1 nanometer). Moving to ever-smaller nodes in the future will require more than just smaller features. At 3/2 nanometers and beyond, new materials are likely to be needed. There is an explosion of material science research underway at universities and companies around the globe to find solutions. TSM is at the forefront of some of this research.

The two most promising new technologies are carbon nanotubes (CNTs) and 2D transistors. We've been closely monitoring the carbon nanotube space for the past two decades.

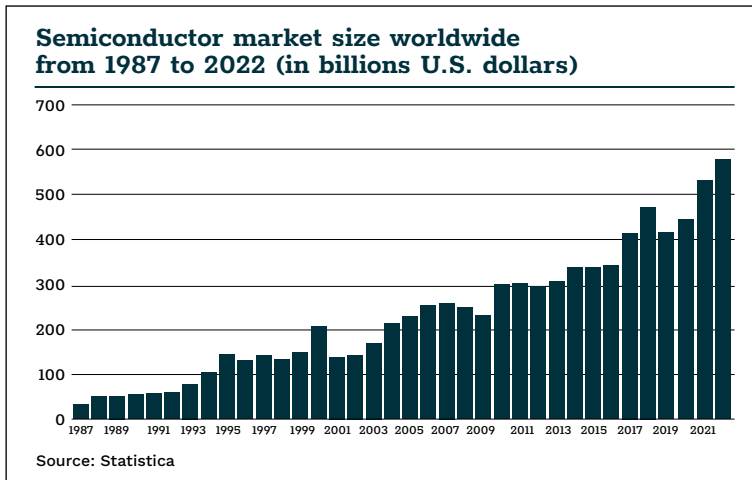
Discovered in the early 1990s, CNTs have high tensile strength and thermal and electrical conductivity compared to silicon. These properties make them attractive for semiconductors in the future.

## Challenges and Opportunities

With respect to 2D transistors, TSM published a paper earlier this year with researchers at MIT noting that new materials have the potential to allow a return to the traditional 2D transistors while matching current densities. The paper attracted a good deal of media attention and raised some eyebrows in research labs around the world.

Executives at TSM were quick to point out that chips with 2D transistors made with materials other than silicon are still a way out in the future. There are many things that still need to be better understood to bring semiconductors with new materials and structures into a large-scale manufacturing base. That said, there are promising developments, and an emerging road map for future chips beyond 2 nm.

The semiconductor market has grown by leaps and bounds over the past three decades (see exhibit below) with innovations by **Paradigm Portfolio** companies TSM and ASML. These companies are helping to drive growth as chip transistor nodes shrink from the micron to the single-digit nano level. This year, industry revenues are expected to be more than \$500 billion, with current demand outstripping supply. In 2023, the industry is forecast to top \$600 billion, an 18X increase over the size of the market in 1987.



The Nanocosm is filled with challenges and opportunities. From our vantage point, two companies that are well-positioned to prosper in the future are TSM and ASML. Both companies have invested heavily over the years and decades — and continue to invest today — to pursue the opportunities in the market and tackle challenges arising along the way.

TSM has been on a roll over the past year, with the company doing all it can do to meet demand. The company posted record revenue of \$5.3 billion this summer and is tracking to set more financial records later this year. The stock has been one of the top performers in our portfolio with a return one percentage point shy of 140%. Valuation-wise, TSM continues

to look favorable relative to broad market comps, with the stock trading on a forward P/E of 23.2, below the Nasdaq-100 forward P/E of 29.0.

The obvious wild card in the outlook for TSM is ongoing friction between China and Taiwan. At the same time the Netherlands — under pressure from the U.S. government — is denying China the required export license for ASML's EUV machines.

TSM's is now venturing out of the Nanocosm and into the Cryptocosm. TSM's chips and tech are found in every CPU. In order to mine crypto you need tech running 24/7. TSM's chips allow tech to run, and keep running.

## **ACTION TO TAKE: Buy Taiwan Semiconductor Corp. (TSM) at market.**

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